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Porous PTFE membrane used for sepn. - is obtd. by forming a mixt of resin
and filament forming polymer, heat treating and removing polymer

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Number of Countries: 015 Number of Patents: 013

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 8900879	A	19890209	WO 88JP755	A	19880728	198908	B
JP 1034407	A	19890203	JP 87193322	A	19870730	198911	
JP 1034408	A	19890203	JP 87193323	A	19870730	198911	
JP 1129043	A	19890522	JP 87287627	A	19871113	198926	
EP 343247	A	19891129	EP 88906883	A	19880728	198948	
US 5158680	A	19921027	US 89358205	A	19890530	199246	
JP 92068010	B	19921030	JP 87193322	A	19870730	199249	
JP 92068011	B	19921030	JP 87193323	A	19870730	199249	
EP 343247	B1	19930303	EP 88906883	A	19880728	199309	
			WO 88JP755	A	19880728		
DE 3878899	G	19930408	DE 3878899	A	19880728	199315	
			EP 88906883	A	19880728		
			WO 88JP755	A	19880728		
US 5286324	A	19940215	US 89358205	A	19890530	199407	
			US 92918060	A	19920724		
JP 94070155	B2	19940907	JP 87287627	A	19871113	199434	
EP 343247	A4	19891227	EP 88906883	A	19880000	199509	

Priority Applications (No Type Date): JP 87287627 A 19871113; JP 87193322 A
19870730; JP 87193323 A 19870730

Cited Patents: JP 42003691; JP 48020780; JP 59005037; JP 60053153; JP 61129006; JP 62045302; DE 3444387; EP 40670; GB 1169601; GB 2025256; JP 67023691; JP 67003691

Patent Details:

Patent No	Kind	Lang	Pg	Main IPC	Filing Notes
WO 8900879	A	J	51		
Designated States (National): US					
Designated States (Regional): AT BE CH DE FR GB IT LU NL SE					
EP 343247	A	E			
Designated States (Regional): AT BE CH DE FR GB IT LI LU NL SE					
US 5158680	A		18	B01D-069/08	
JP 92068010	B		8	B01D-071/36	Based on patent JP 1034407
JP 92068011	B		8	B01D-071/36	Based on patent JP 1034408
EP 343247	B1 E		23	B01D-069/08	Based on patent WO 8900879
Designated States (Regional): CH DE FR GB IT LI NL					
DE 3878899	G			B01D-069/08	Based on patent EP 343247
Based on patent WO 8900879					
US 5286324	A		10	B32B-031/00	Div ex application US 89358205
Div ex patent US 5158680					
JP 94070155	B2		8	C08J-009/26	Based on patent JP 1129043

Abstract (Basic): WO 8900879 A

The radius of the sepg. hollows in the membrane is specified to be 0.01 - 2 microns. The PTFE resin can be TFE homopolymer, a TFE-perfluoroalkylvinylether copolymer, a TFE-hexafluoropropylene copolymer, a TFE-ethylene copolymer or a mixt. of these.

It is specified that the polytetrafluoroethylene resin has no fibrillised part but is only composed of an organisation of combined resin particles. Prod'n. of membrane comprises i) forming a mixture of a dispersive soln. of PTFE resin and a filament forming polymer into a membrane having hollows or a sheet-shaped membrane. ii) This membrane is heat-treated at the melting temp. of the resin or higher. iii) The filament forming polymer is removed.

The dispersion solution of PTFE is specified to be an aqueous solution. The particle size of the resin in the dispersion solution is 1 micron or less. The separating apparatus is made of the porous hollow filament membrane of PTFE seated at the terminals with a fluoride resin such as vinylidene fluoride resin etc. Prod'n. of sepg. appts. comprises i), ii), iii) and additionally iv) encasing the membrane and seating it with fluoride resin using a melt-fixing method.

USE/ADVANTAGE - This process enables porous polytetrafluoro-ethylene resin membranes with various pore sizes and void ratios to be produced by adding different kinds or amounts of additives to the starting mixture. Providing a new technique for separating substances at high temperatures and in strongly decomposing or dissolving media.

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Abstract (Equivalent): EP 343247 B

A porous hollow fibre membrane comprising, at least as its main component, a polytetrafluoroethylene resin particle bond structure substantially devoid of a fibrillated portion. (Dwg.0/23)

Abstract (Equivalent): US 5158680 A

The porous film membrane consists of a layer of a porous PTFE resin (I) particle bond structure devoid of a fibrillated portion, having pores 0.01-2 microns in size, and is formed by spreading a film-formable mixt., comprising an aq. or organic dispersion formed by emulsification polymerisation contg. surfactant, on a flat plate or continuous belt and then coagulating.

Pref. (I) is from tetrafluoroethylene homopolymer, a tetrafluoroethylene-perfluoroalkylvinyl ether copolymer, a tetrafluoroethylene-hexafluoropropylene copolymer a tetrafluoroethylene-ethylene copolymer and mixts. of them.

USE - Membranes for ultrafiltration, micro-filtration, etc. are mfd. by the process. (Dwg.0/23)t